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GRICE'S IMPLICATURE AND TOULMIN'S WARRANTS: THEIR ARRESTING  
SIMILARITIES AND THE RESULTING IMPLICATIONS FOR THE  
UNDERSTANDING OF MEANING IN COMMUNICATION

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A Project  
Presented to the  
Faculty of  
California State University,  
San Bernardino

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts  
in  
English Composition

---

by  
Caroline Paige Krejci  
March 2000

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by  
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March 2000

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## ABSTRACT

Paul Grice's conversational implicature is a widely studied and commonly accepted theory in the field of linguistics, and Stephen Toulmin's model of argument is perhaps even more widely studied and accepted in the field of argument (Chapter 1). I was struck by the great similarities between the two theories, particularly the leap of logic both are dependent upon, and surprised by the fact that it didn't seem that anyone had explored the similarities. In this thesis, I explore the similarities of the processes, of Grice's implicature and Toulmin's model of argument, and how looking at the two together increases the understanding of both (Chapter 2). Ultimately, what I discovered was that both Grice's implicature and Toulmin's model of argument are surface manifestations of a larger underlying concept of mental models. In addition, the realization that mental models underlie these two processes, which are commonly used every day by human beings, illustrates how incredibly dependent human beings are on mental models to interpret language and context, as well as make decisions (Chapter 3). Finally, I looked at how these findings show how miscommunication occurs and the possible social, intercultural, and educational ramifications of seeing Grice's implicature, Toulmin's model of argument, and mental models in light of this new perspective (Chapter 4).



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## Introduction

One of the pervasive illusions which persists in the analysis of language is that we understand the meaning of a linguistic message solely on the basis of the words and the structure of the sentence(s) used to convey that message.

Discourse Analysis by Gillian Brown and George Yule (223)

Paul Grice's idea of conversational implicature explains how people communicate when what is "implied, suggested, meant ...is distinct from what...[is]...said" (24). An example of implicature occurs when the question "Is Mike home?" is answered "His car is parked in the driveway," from which the hearer is supposed to infer that if Mike's car is in Mike's driveway, then Mike must be home.

Toulmin seems to be looking at something somewhat similar to what Grice is as Toulmin dissects arguments, labels the basic elements common to arguments, forms his Model of Argument, and explains how arguments work according to his model. Toulmin (along with his co-authors Richard Rieke and Allen Janik) says that a "warrant," one of his "elements of argument," which he says may be left unstated in arguments, acts as a "license to argue from grounds to a conclusion." In other words, warrants show that the step from the grounds to the claim of an argument "is a rationally defensible one" (Toulmin, Rieke, and Janik, Introduction 45). A warrant allows a person to argue that "wherever there's smoke, there's a fire"; Toulmin says, "We

can in fact read it as meaning, 'Wherever smoke is visible, it can be concluded that there is a fire also'" (Toulmin, Rieke, and Janik, Introduction 44).

Paul Grice is best known for his contribution to the field of linguistics and Stephen Toulmin is known for his contribution to the field of modern argument; however, I will argue in this thesis that there is an undeniable, and seemingly unexplored, similarity between their work. I believe Paul Grice's theory of conversational implicature and Stephen Toulmin's model of argument each take into account a wealth of unstated assumptions which speakers, writers, audiences, and readers carry in their minds and employ in order to interpret language. I further believe that Grice's and Toulmin's practical looks at the process of interpersonal communication give us an insightful view into how language, only a single part of the communication of meaning, works along with the wide variety of shifting physical and societal variables of context.

Grice's and Toulmin's ideas hinge on explaining how people are able to "travel" or "leap" from premise to conclusion. Both consciously recognize that there is a leap, both see the leap as being of the same nature, and both offer similar explanations as to how the gaps are filled in so that the leap can be completed. Grice and Toulmin each bring up the extreme importance of background knowledge and context to

fill in the gap that occurs between the premise and conclusion. Most importantly, the ideas of both seem to overlap and confirm each other. Grice talks about the importance of argument:

The presence of conversational implicature must be capable of being worked out; for even if it can be intuitively grasped, unless the intuition is replaceable by argument, the implicature (if present at all) will not count as a conversational implicature... (Grice 31)

Meanwhile, Toulmin talks about the validity of inference:

Inferring, in a phrase, does not always involve calculating, and the canons of sound argument can be applied alike whether we have reached our conclusions by way of a computation or by a simple leap. For logic is concerned not with the manner of our inferring, or with questions of technique: its primary business is...retrospective...

(Toulmin, Uses 6)

This similarity is not all that surprising since both Grice and Toulmin are philosophers reacting against formal logic and making a map of the practical logic people employ every day as a part of daily living.

In the first chapter of my thesis I will take an in-depth look at Grice's implicature and Toulmin's warrants. In

the second chapter, I will examine the similarities between the two ideas. In the third chapter, I will place these ideas and their implications into a continuing discussion of how the processes of communication work and how miscommunication may arise during these processes. In the fourth chapter, I will explicate my conclusions. Throughout my thesis, I propose to use excerpts from the syndicated newspaper advice column, "Miss Manners," as illustrative texts in order to demonstrate my points. By writing my thesis as I have outlined in this introduction, I hope to add to the understanding of how people communicate with one another and in so doing, to understand where and how possibilities of miscommunication can arise.



## Chapter One: What Grice and Toulmin Say

### Part A: What Grice Says

At the simplest level, Paul Grice says that people quite often do not say literally what they mean, but they are still able to communicate because others can use their own knowledge to fill in the gaps and understand the implied messages. Grice explains that communication is a cooperative effort between speakers and listeners, and his theory of conversational implicature (which may be applied quite successfully to written texts, as well as, conversation) gives a more detailed account of how he believes the cooperative process works.

In the essay, "Logic and Conversation," in which Grice introduces his idea of implicature, he starts out by explaining how he means to use the opposing terms "implicature" and "say." Grice defines implicature as a situation in which, "what is implied, suggested, meant...is distinct from what...[is]...said...." (24). In other words, the message the speaker/reader is trying to convey is not conveyed solely by the literal meanings of the words, so an implicature is an occasion when a message is being implied rather than implicitly stated. On the other hand, the word "say" is related to the literal meanings of the words. Grice states that, "In the sense in which I am using the word say I intend what someone has said to be closely related to the

conventional meaning of the words (the sentence) he has uttered" (24-25).

Essential to Grice's notion of implicature is his explanation of how conversation is a cooperative effort that is the basis of his Cooperative Principle. Grice points out the cooperative nature of conversation:

Our talk exchanges do not normally consist of a succession of disconnected remarks, and would not be rational if they did. They are characteristically, to some degree at least, cooperative efforts; and each participant recognizes in them, to some extent, a common purpose, or set of purposes, or at least a mutually accepted direction.... it may evolve during the exchange...But at each stage, some possible conversational moves would be excluded as conversationally unsuitable. (26)

His ideas seem not only rational, but also obvious to anyone who has earnestly tried to hold a conversation on one subject with another person who is intent on persistency discussing another subject, since, usually, in such instances of a lack of cooperation, a stalemate results, and neither subject is discussed.

Grice's Cooperative Principle explains more exactly the nature of the cooperation required of participants in a discussion. The Cooperative Principle tells participants,

"Make your conversational contribution such as it is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged" (Grice 26). Grice also suggests that for anyone who converses with a purpose or goal, such as "giving and receiving information, influencing and being influenced by others," talk exchanges will most likely only meet that purpose or goal if the Cooperative Principle is followed (Grice 30).

Grice also breaks the Cooperative Principle into four subcategories of cooperation necessary to effective communication, which he calls "maxims." The four maxims he calls quantity, quality, relation, and manner. The maxim of quantity relates to a speaker giving enough information to forward the purpose of the communication without relating more information than is necessary. The maxim of quality relates to not passing along information that the speaker believes is false or information for which the speaker lacks evidence. The maxim of relation simply commands speakers to "Be relevant," rather than interjecting information that has nothing to do with the current topic and purpose to the conversation (Grice 30). The forth maxim, manner, is slightly different from the preceding three in that it does not relate to what is being said, but rather, to "how what is said is to be said," (Grice 30). The maxim of manner relates

to the speakers presenting their information in a clear, unambiguous, orderly, and easy to understand manner.

According to Grice, these four maxims are important because if a speaker fails to fulfill one or more of the four maxims, then an instance of implicature may be created. Someone might not fulfill a maxim in several ways. A speaker may violate a maxim quietly, which may result in listeners being misled, or a speaker can make it plain that he or she refuses to cooperate and fulfill one of the maxims, which may result in listeners not getting the information they desire. A person may be faced with a clash between two maxims, such as when trying to give as much information as is required (maxim of quantity) while still trying to have adequate evidence for what is being said (maxim of quality), and end up violating one or the other maxim. Lastly, a speaker may blatantly fail to fulfill, or "flout," a maxim under the assumption that listeners already possess the information needed to fulfill that maxim. It is in this last case that an instance of implicature is created.

If a speaker or writer has flouted a maxim of the Cooperative Principle (and is not unable to fulfill the maxim, trying to mislead, or simply opt out of the conversation), he or she may do so because that person believes that listeners or readers have the information to make up for what is lost by flouting the maxim. In such a case the speaker or writer is implying part of the message,

but still being cooperative, though, perhaps, making understanding the message a bit more work for the listeners or readers.

So, how do listeners and readers come to understand what is being implied? First, according to Grice, unless there is some indication otherwise, most listeners tend to start out by assuming that the Cooperative Principle is being observed. Then, they consider the information they have been given and their own background knowledge, and they logically try to piece together and understand the message being implied.

Grice says:

The presence of a conversational implicature must be capable of being worked out; for even if it can in fact be intuitively grasped, unless the intuition is replaceable by an argument, the implicature (if present at all) will not count as a conversational implicature.... To work out that a particular conversational implicature is present, the hearer will rely on the following data: (1) the conventional meaning of the words used, together with the identity of any references that may be involved; (2) the Cooperative Principle and its maxims; (3) the context, linguistic or otherwise, of the utterance; other items of background knowledge; and (5) the fact (or supposed fact) that all relevant items falling under the

previous headings are available to both participants and both participants know or assume this to be the case. (31)

If we return to the very first example of implicature given in the introduction of this thesis, we can see how the gaps are filled in and how an instance of conversational implicature can be "worked out." If the question, "Is Mike home?" is answered, "His car is parked in the drive way," then the hearer is supposed to infer that, if Mike's car is in Mike's driveway, then Mike must be home. By default, the inquirer is probably going to expect the responder to observe the Cooperative Principle and its maxims (unless there is evidence to the contrary) and the words themselves and the sentence itself are easy enough to comprehend. If the inquirer expects a truthful answer he or she would be asking this question of someone who was in a position to have the information to answer the question. In this case, the speaker would probably ask the question of someone who could see or had just seen Mike's house. The inquirer and the responder are also relying on the shared background knowledge that Mike lives in a suburban area of Southern California so that to run any errands or go anywhere he needs to drive his car, as well as the fact that Mike is not someone who walks or bicycles for exercise, so if Mike's car is in his driveway, it is logical to assume that Mike is home.

Obviously, implicature is quite prevalent in everyday speech and writing, and Georgia Green's article, "Some Remarks on Why There is Implicature," sheds some light on reasons why implicature is "so pervasive in natural discourse of all genres, registers, and styles" (77). Green explains that "implicature is in fact quicker (because it leaves out a lot of what is intended to be understood), [socially] safer (because what is intended is not said), and more effective than 'just saying exactly what you mean' (because it depends on the hearer to work out exactly what is intended)," so the hearer has more invested and is more likely to think about and remember the message (78). She also states that implicature "promotes solidarity, implying 'we share so much....'" (Green 86).

Green also brings up the idea that "so-called literal, explicit speech is considerably less literal and more figurative than unreflecting judgment would estimate" (84). She estimates that up to 20% of the "content words" in a narrative are used in "extended, metaphorical, or metonymic" ways which would not be listed in dictionaries. As an example, she uses the sentence, "This newspaper claims that the president bombed the hamlet because North Vietnam would not come to terms" (Green 84). For this example she points out that:

Newspaper refers to a reporter or an editorial staff, not a paper and ink product; bombed refers

to an authorization to bomb, not the actual loosing of explosive material; and North Vietnam does not refer to a geographic or political entity, but to the authorized representative of one. (Green 84)

Metaphor, meiosis, hyperbole, allusions, sarcasm, and irony are all used in everyday speech to communicate ideas and make a point, and they are often used as part of, or in conjunction with, implicature. This means that not all examples of implicature are as simple and easy to work out as the preceding example involving Mike and his car. The following example of implicature is an example of the complexity of implicature, which may be met with and deciphered in everyday situations. This following selection is a question addressed to Judith Martin, a syndicated newspaper columnist, who answers letters for her alter ego, known as Miss Manners.

Dear Miss Manners:

Most wedding cakes are so vulgar, with all the overly fancy trimming, and I would prefer to have a perfectly plain cake. My fiancée', who generally has very good taste, and who agrees with me about keeping the rest of the wedding simple, says that would look "cheap" and wants one of those several-tiered monstrosities. She has forgotten that she once told me a story about being a flower girl and looking up at her cousin's cake which had a bride



and groom on the top, and probably that's what she really wants but is ashamed to admit it. This is such a dumb argument, but it makes me wonder what else she is keeping from me in the way of secret ickyness.

Gentle Reader:

Who are you, the Mies van der Rohe of the pastry shop? Wedding cakes are supposed to be vulgar. Go buy yourself a doughnut to satisfy your aesthetic sense, and let her have that wedding cake. (Martin 352)

The question addressed to Miss Manners, in a rather roundabout and implied way by a groom-to-be, is whether it is better to have a "vulgar" or a "perfectly plain" wedding cake. Miss Manners starts her answer to the groom, who prefers the plain cake, with a question: "Who are you, the Mies van der Rohe of the pastry shop?" The Maxim of Relation seems to be violated. Readers may find themselves asking how a "German-born U.S. architect whose rectilinear forms, crafted in elegant simplicity, epitomized the International Style of architecture that emerged in the late 1920" ("Mies van der Rohe" 116), is relevant to a discussion of wedding cakes? There is also the possibility that readers will be asking who Mies van der Rohe is. Miss Manners does seem to realize that these questions could arise because she continues her explanation, and the rest of Miss Manners'

answer is more clearly related to the issue at hand. Though the Maxim of Relation seems to be violated by Miss Manners' opening question, Miss Manners seems to compensate by adding material until the question is obviously, if not implicitly, answered. The sentence "Wedding cakes are supposed to be vulgar" does not directly answer the groom's question, but it does seem to imply that vulgar wedding cakes are all right. The last sentence, "Go buy yourself a doughnut to satisfy your aesthetic sense, and let her have that wedding cake," ties the pastry-architecture analogy together. This last sentence seems to plainly imply that a vulgar wedding cake is preferable to a plain one. This sentence also may hint that the aesthetic sense of the groom is best displayed at a different time and place than when choosing the wedding cake.

Miss Manners does gain something by using the reference to Mies van der Rohe. Miss Manners links the groom who has written to her with Mies van der Rohe when she asks the question "Who are you, the Mies van der Rohe of the pastry shop?" By asking this question, she implies that the groom's taste is in some way similar to that of Mies van der Rohe. It is the hyperbolic nature of the comparison between the two men that brings the humor to Miss Manners' answer. Here is a groom who is concerned that his wedding cake is not tacky, and he is being compared to a famous architect who, to a great extent, has influenced the form of modern architecture. The similarities between the two are greatly outweighed by

their differences. The groom would have to be suffering some serious delusions of grandeur to truly believe he was a Mies van der Rohe.

There is also the implication that the groom, by insisting on a plain cake for aesthetic reasons, is overstepping his bounds because the groom does not have the credibility, in matters of aesthetics, of a famous architect. By asking "Who are you?" Miss Manners seems to be using a slightly more polite version of the sarcastic question, "Who do you think you are?" a question which seems inherently to imply an overstepping of bounds by the person being questioned.

For those readers who really know the trends in 20th century architecture, the link of similar tastes between the groom and Mies van der Rohe holds still more meaning. The architectural ideas of Mies van der Rohe, father of the now common "steel bones and glass skins" skyscrapers, fell out of favor, and he had to face "the charge that his buildings...[were]...cold" ("Mies van der Rohe" 117). It also seems likely that the readers will see the groom as "cold" because he prefers a coldly aesthetic, plain cake to the more romantic cake his fiancée prefers, and also because he is willing to make an issue of what he himself calls "such a dumb argument" by writing to Miss Manners. Some readers may even go as far as to suggest that the groom is putting aesthetics before his bride's happiness.

Miss Manners seems to violate the maxim of relation in order to communicate by implicature for many reasons including that she can communicate more by implying than by using literal language. The preceding example shows that she can say much more by using implicature. As Green points out, in instances of implicature such as this, paraphrasing can not adequately say the same thing. Instead of merely answering the question addressed to her, she comments on, and gets her readers thinking about, underlying issues, such as aesthetics and tradition, as well.

Implicature also plays an essential role in getting readers to identify with Miss Manners, and rhetorically, Miss Manners' personality is an important factor in convincing people to mind their manners. Because she opts to use implicature instead of simply giving the information in the most obvious manner, she fosters a feeling of camaraderie with her readers, because her answers seem to show her witty personality and because she seems to be sharing an "inside joke" with her readers. Her reference to Mies van der Rohe is a good example of this. The readers who understand the reference may be impressed by Miss Manners' clever and funny implicature, but they are also pleased and flattered that they are clever enough and educated enough to unravel and fully understand the implicature themselves. Readers feel as if they are initiated into an exclusive and intellectual group; they become part of the "in crowd." Consequently,

they gain a vested interest in Miss Manners, and they are inclined to take her advice more seriously.

Implicature, therefore, is an important tool which and Judith Martin, through her character Miss Manners, uses to reach her underlying goals. Miss Manners' humorous implicature, because it fosters feeling of camaraderie, makes her more persuasive as she continues her crusade to have people be more polite to one another and be more socially responsible. Also, it is important not to forget that Miss Manners' personality is created by Judith Martin, whose ulterior motives seem to be the same as Miss Manners', but with the additional motive of marketability. Judith Martin sells her books and columns, so she wants people to like Miss Manners and to find Miss Manners entertaining so that people will want to buy the Miss Manners books. Ultimately, Miss Manners' violation of the maxim of relation and the resulting implicature come to make Judith Martin a great deal of money, and also expose many people to the rules of correct social behavior in a form that makes etiquette palatable.

#### Part B: What Toulmin Said

Toulmin devised a new model of argument which has proved to be a useful way to understand how practical, everyday arguments work. He built a model composed of six elements -- grounds, claim, warrant, backing, modality, and rebuttal -- which could be used as a way of outlining ordinary arguments

to see how people travel logically from the grounds of an argument to the claim of the argument (see figure 1).

Similar to Grice's implicature, Toulmin's model of argument takes into account an arguer's background knowledge, including information that may be left unstated.

Toulmin's model of argument is perhaps most easily explained by starting with the base three elements: the grounds, claim, and warrant. Generally, they are diagrammed with grounds and claim connected on a horizontal axis (grounds on the left end and claim on the right), and the warrant is between and slightly above the other two elements on a line segment perpendicular to the horizontal grounds/claim axis. Not surprisingly, to those who have studied argument, grounds are "the specific facts relied on to support a given claim" (Toulmin, Rieke, and Janik, Introduction 33), while claims are "assertions put forward publicly for general acceptance" (Toulmin, Rieke, and Janik, Introduction 29). In addition to these more obvious elements of argument, Toulmin added a third, the warrant, which is defined as "the portion of the argument [which] authorizes our movement from the grounds to the claim. It answers the question, how do you justify the move from these grounds to that claim?" (Foss, Foss, and Trapp, 100).

It is the last of this group of three elements, the warrant, which is the most crucial part of Toulmin's model of

argument. This element differentiates Toulmin's model of argument from other models of argument, particularly the traditional, formal modes of argument. The warrant is critical to Toulmin's model because it takes into account the idea that there is movement between the grounds and the claim; one's mind must fill in the gap between the grounds and the claim in order to make the leap in logic from the grounds to the claim. To give an example of a warrant, take the claim, "Joseph will not be in class today," and the ground, "because his car has broken down." The warrant, which is unstated, is that Joseph need his car to travel to school, and this warrant allows the logical movement from the grounds to the claim.

The warrant is an element that may or may not actually be stated as part of the argument (while in formal logic all the crucial parts of the argument would be stated). A warrant may be unstated because it is background knowledge, which the arguer may assume that other people share and, therefore, is deemed by the arguer unnecessary to state. It may seem to the arguer that the warrant is too obvious to state or question.

If we return to Toulmin's diagram to fill in the additional three elements in his model of argument, we will have a simple illustration of how backing, modality, and rebuttal relate to the base three elements, the grounds, claim, and warrant.

Backing is located right above the warrant on the same vertical line as the warrant in order to illustrate that it supports the warrant. Modality is located on the horizontal line which connects the grounds and claim, but it is centered between the warrant and the claim in order to show that modality explains how likely it is that the leap from the grounds to the claim is a sound one. Lastly, rebuttal is located directly below modality on a perpendicular line segment to show how some circumstances may completely derail the argument so that the trip from the grounds to the claim would not be possible.

This second group of three of Toulmin's elements of argument, backing, modality, and rebuttal, also distinguishes Toulmin's model from traditional or formal models because these elements are designed to deal with issues of context which do not arise in formal argument (Foss, Foss, and Trapp 101). Since formal logic deals with universal truths, which do not change, the traditional models (i.e. the syllogism) did not need these elements. However, since Toulmin designed his model to break down practical arguments, he had to deal with the problems of context, including uncertainty, which occur in everyday arguments. In his model of argument the elements of backing, modality, and rebuttal take into account context and uncertainty and make them part of the model.



Backing is the "explicit...body of experience relied on to establish the trustworthiness," or soundness of a warrant (Toulmin, Rieke, and Janik, Introduction 57). Toulmin points out that "warrants are not self-validating," and, therefore, it is necessary to have backing to show that a warrant is sound and relevant to the case being examined (Toulmin, Rieke, and Janik, Introduction 58). While a warrant may be very specific to the case, i.e. "Joseph needs his car to travel to school," backing usually consists of more general background knowledge and the larger context of the argument, i.e. "Joseph lives 20 miles from school, walking 20 miles to school is beyond the stamina and time allowances of most people, and mass transit is unavailable in Joseph's area" (notice that just as warrants are often left unstated, the backing is also often left unstated). A warrant specifically states how one can get from the grounds to the claim, but the grounds show that the warrant is sound.

Modality is the part of the argument that explains how likely it is that the grounds will indeed lead to the claim. Toulmin says, "every argument has a certain *modality*. By the use of this term, we refer to the strength or weakness, conditions, and/or limitations with which a claim is advanced (Toulmin, Rieke, and Janik, Introduction 70). Furthermore, this modality is often put forth in an argument by using one of

a familiar set of colloquial adverbs and adverbial phrases that are customarily used to mark these modalities -- as *modal qualifiers* or *modifiers* ...

[including]...

--necessarily

--certainly

--presumably

--in all probability

--so far as the evidence goes

--for all that we can tell

--very likely

--very possibly

--maybe

--apparently

--plausibly

--or so it seems

(Toulmin, Rieke, and Janik, Introduction 70-71).

To continue the example argument that Joseph will not be in class because his car has broken down, it is understood that Joseph most likely will not be able to come to class, because, as far as the arguer knows, Joseph has no transportation to class.

This brings us to the last of Toulmin's elements, rebuttals, which can be thought of simply as the spoilers of arguments. Toulmin says rebuttals are the "extraordinary or

exceptional circumstances that might undermine the force of the supporting arguments," (Toulmin, Rieke, and Janik, Introduction 75). In other words, the leap from the grounds to the claim may only be logical, and the argument itself valid, in the absence of the certain exceptional circumstances known as the rebuttal.

If we return to the example of Joseph and his broken-down car, a rebuttal would be that Yvonne is picking Joseph up and driving him to school for his class. Suddenly, because of this rebuttal, the argument that Joseph will not be in class today because his car broke down is invalid. It is unlikely that the claim that Joseph will not be in class will be met, because the assumption that Joseph will not have transportation is disproven, so the basis for the leap from the grounds to the claim is suddenly gone.

Let us look at an example, one that Toulmin himself used, that illustrates how Toulmin's model is unlike formal argument and also involves knowledge that might seem obvious from Toulmin's British perspective of a few decades ago, but is not as obvious to your average southern California native. Toulmin starts out with his grounds, warrant, and claim: "Harry was born in Bermuda"...[grounds]...A man born in Bermuda will be a British subject...[warrant]...So...Harry is a British subject [claim] (Toulmin Uses 99).

As Foss, Foss, and Trapp point out, "Alone, these three primary elements fail to distinguish analytical from practical arguments." In fact they took these three elements and from them made a formal syllogism:

Major Premise: A man born in Bermuda will be a British citizen [sic].

Minor Premise: Harry was born in Bermuda.

Conclusion: Harry is a British citizen [sic]. (101)

However, as in the last example of Joseph getting to class, the additions of the backing, modality, rebuttal to this example "complete the layout of an argument by showing how practical arguments are contextualized and, thus, are different from analytical arguments" (Foss 101).

The backing in this case, the laws and national influence, that cause a person born in Bermuda to be a British subject are crucial to understanding why the warrant is valid, particularly for someone who is not familiar with Bermuda or the details of how Bermuda fits into British imperialistic history. Also, the backing is necessary to bring context to the argument, because this argument is not immutable truth; Bermuda has not always been under the control of England, and it may not always continue to be so.

The modality and rebuttal also add additional context necessary to understand how likely it is that this practical argument is correct, in other words, that the claim will follow from the grounds. The modality in this example,

"presumably," indicates the strength of the likelihood that the claim will follow from the grounds (Toulmin Uses 105). The term "presumably" is not the strongest of modal qualifiers. It leaves open the possibility that the claim may not follow from the grounds. This is where the rebuttal comes in. The rebuttal, the conditions which would prevent the conclusion from following from the claim in this argument that Harry is a British subject, are "Unless...Both his parents were aliens/ he has become a naturalised [sic] American" (Toulmin Uses 105). If either of these conditions is met the argument is spoiled; the claim that "Harry is a British subject" cannot be logically expected to follow because either of these conditions would effect Harry's citizenship (Toulmin Uses 99). In the first case, he might be expected to share the citizenship of one or both his parents, and in the second Harry would be an American citizen.

## Chapter Two: How Grice's and Toulmin's Ideas are Alike

The presence of conversational implicature must be capable of being worked out; for even if it can be intuitively grasped, unless the intuition is replaceable by argument, the implicature (if present at all) will not count as a conversational implicature... (Grice 31)

Inferring in a phrase, does not always involve calculating, and the canons of sound argument can be applied alike whether we have reached our conclusions by way of a computation or by a simple leap. For logic is concerned not with the manner of our inferring, or with questions of technique: its primary business is...retrospective... (Toulmin, Uses 6)

There are some striking similarities between Grice's implicature and Toulmin's warrants that seem to prove that both processes work in the same way and that the ideas of both seem to overlap and confirm each other. As the preceding quotes illustrate, Grice talks about the importance of argument, and Toulmin talks about the validity of inference. Neither process excludes the other; rather, they seem to be manifestations of the same larger processes of using background knowledge to fill in gaps in understanding and logic.

Ultimately, implicature and warrants show how the meaning is not in words or sentences but in the logical interpretation of background knowledge. When a speaker or writer tries to communicate or argue an idea, what is said is usually not stated in a truly literal and explicit way. Consequently, the first similarity that is readily apparent

between both implicature and unstated warrants is that in both there is a "gap" in the information given to a listener/reader that must be "filled in" or bridged. A second obvious similarity between implicature and unstated warrants is that the information supplied by the listener or reader and used to fill in the gap has a large effect on the meaning interpreted. The reader's/listener's perspective or reasoning may lead to either a subtly or wildly different interpretation of a statement. (We will look at a detailed example of this in the next chapter.) Paul Grice's theory of conversational implicature and Stephen Toulmin's model of argument each take into account the unstated assumptions which speakers, writers, audiences, and readers carry in their minds and use in order to interpret language.

A further similarity is that the "gap" in the two processes seems to be of a similar nature. If we return to two earlier examples this is evident (Fig. 5). The example given of implicature is, when asked if Mike is home, a speaker replies, "His car is parked in the driveway," assuming that the hearer will infer that Mike must be home. An example Toulmin gives of implicature is very similar; he looks at the logical argument of the commonly used metaphor, "where there is smoke, there is fire." In both cases, while the leap in logic can be made intuitively, or perhaps be dismissed as "common sense," the logic behind the leap can be worked out in retrospective using the background knowledge

the speaker or writer assumes of the listener or reader. In both cases, the trail of connections is apparent. Mike uses his car to get around, and smoke is a by-product of something burning, which requires a flame or other source of extreme heat. In each, the presence of one thing indicates the presence of something else.

There also seems to be a parallelism between Grice's maxims and what might be thought of as maxims of understanding warrants and backing of arguments in Toulmin's model (Fig. 6). In the two preceding, and all, cases of implicature and unstated warrants, the logic of the speaker or writer may be worked out by taking into account unstated assumptions which speakers, writers, audiences, and readers carry in their minds and employ in order to interpret language. Grice isolates four maxims: quantity (speaker giving enough information), quality (speaker not passing along information that the speaker believes is false or information for which the speaker lacks evidence), relation (speaker being relevant to the current topic), and manner (speaker presenting information in a clear, unambiguous, orderly, and easy to understand manner) (28). He says that, when a maxim is flouted, it causes an instance of conversational implicature (Grice 30).

Toulmin does not neatly subdivide the categories of warrant as Grice has done for implicature. Toulmin simply defines a warrant as "the portion of the argument [that]



authorizes our movement from the grounds to the claim. It answers the question, how do you justify the move from these grounds to that claim?" (Foss, Foss, and Trapp, 100). However, unstated warrants, their backing, and conversational implicature rely on the same sorts of information. If a person wishes to make a good argument, one that will convince others rationally, then he or she must obey the cooperative principle in order to communicate effectively with other people. By leaving things unstated in an argument, a speaker/writer may be flouting the cooperative principle or, in effect, flouting the conventions of making a clear argument which allows the logic of the argument to be followed by the hearer or reader. The cooperative principle seems to be similarly vital to understanding communication and argument alike. I would further suggest, for the sake of comparison, that for Toulmin's warrant we could have three "maxims" of understanding logic: past experiences, beliefs, and values (Fig. 6).

This idea seems to point out another striking similarity between implicature and warrants, which is the process of how the mind is able to apply extended background and extended context or what might often be dismissed as "common sense." Grice and Toulmin each bring up the extreme importance of background knowledge, including the understanding of context, to fill in the gap that occurs between the utterance and its meaning or the premise and its conclusion. It should be

remembered that background knowledge includes common experience at the local level (such as a family, a group of friends, people who attended the same school, or a people from the same city) or the shared experience could be at a larger level (everyone who shows horses, everyone in a particular social class in India, everyone in the United States of America, everyone in Eastern Europe, all mothers, all humankind). Also vital to understanding is a common history and/or belief system for people to draw direction from. Stories, real and embellished, from the past, religion, and myths all play a part in how human beings interpret what they see and hear in the world around them. It is important to have these things in order for people to decide what their origin is, what their purpose is, what goals they should have, what is right, what is wrong, what is better, and what is worse. Both Grice and Toulmin show that understanding is not found in words and phrases as much as in a person's past experiences, beliefs, and grasp of context. In the next chapter, we will look further into how background knowledge, using mental models, is stored for use and the mental process of recalling and using this background knowledge. It seems that another similarity between implicature and warrants is the underlying process involved in filling in missing background knowledge taken from mental models.

An additional similarity between Grice's implicature and Toulmin's warrants, which will be expounded upon in the following chapter, is that both allow for an understanding of communication and logic that those rigid formal models could not. What formal logic gained in irrefutability, it lost in impracticality. Formal logic's procrustean approach of leaving out whatever does not fit into the model makes it oftentimes impractical in real life argument and in understanding the logic of real life conversation because it oversimplifies complex issues.

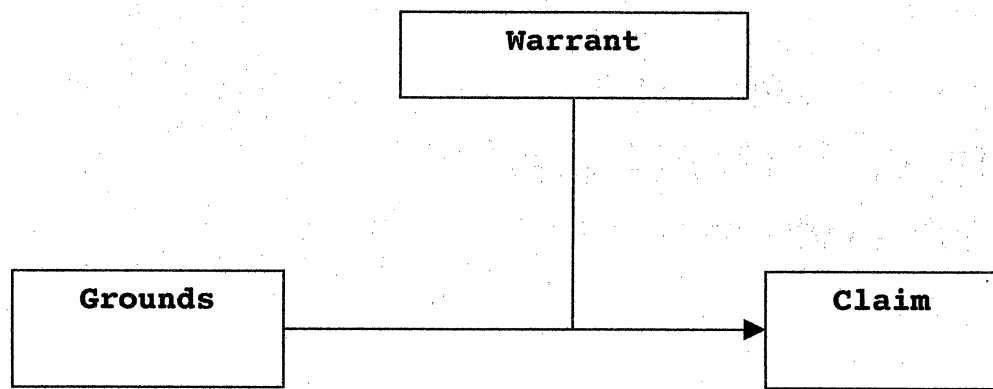
As I pointed out in the introduction, there are many striking similarities between Grice's idea of conversational implicature and Toulmin's model of argument, particularly warrants. First, Grice and Toulmin's ideas hinge on explaining how people are able to "travel" or "leap" from premise to conclusion. Also, both consciously recognize that there is a leap, both see the leap as being of the same nature, and additionally, both offer similar explanations as to how the gaps are filled in so that the leap can be completed. Lastly, I believe that underlying both implicature and warrants is the use of mental models.

The similarity is not all that surprising since both Grice and Toulmin are philosophers reacting against formal logic and making a map of the practical logic people employ every day as a part of daily living. Whereas formal logic strives, through equations of nearly mathematical precision

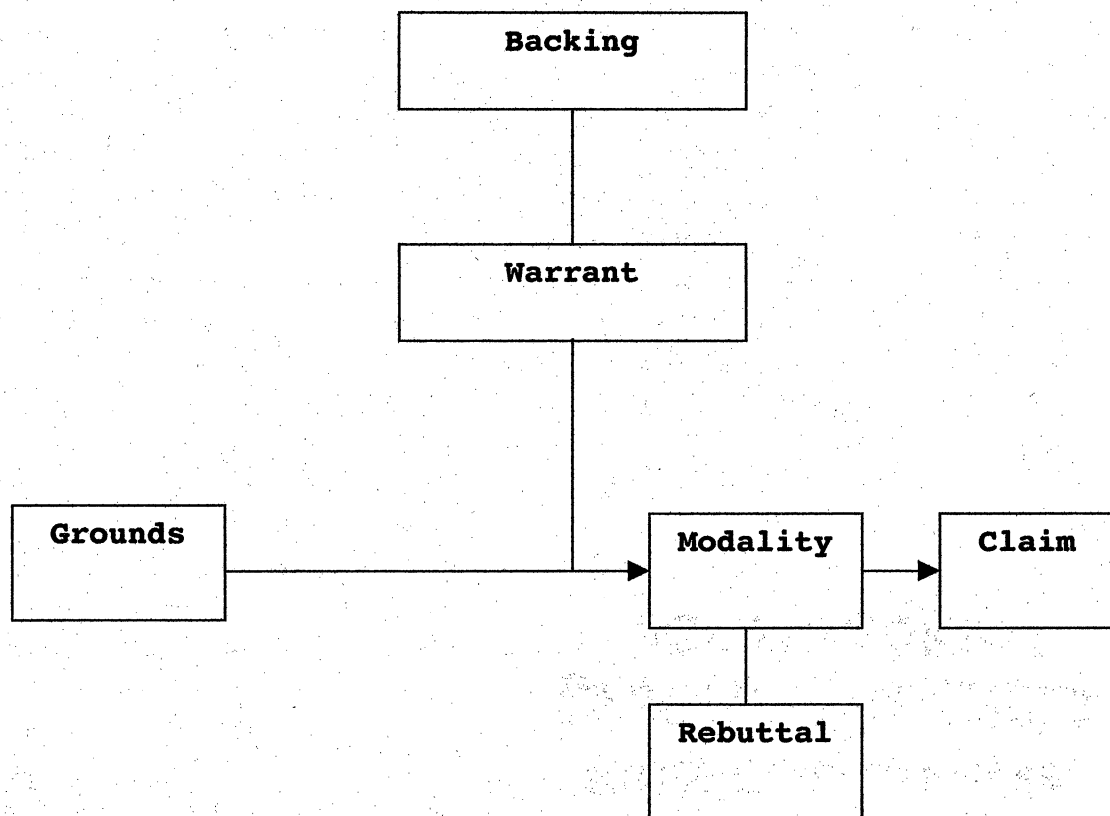
such as irrefutable, internal syllogisms, to produce a ideal and unquestionable form of logic, it is not terribly practical in everyday life, where courses of action and circumstance are usually neither irrefutable nor eternal. Toulmin and Grice were looking not at some perfect ideal of how communication or argument should be, but instead they were looking at how communication actually worked in everyday life. They saw there were systems, logical systems, which were used in everyday, normal conversation and argument. They were not concerned with building some ideal model of conversation or argument for human beings to strive toward; instead, they were interested in finding the logic instinctively applied in conversation and argument. Rather than condemning humankind for being irrational, they strove to find the rational systems that were already being employed. Grice and Toulmin's practical looks at the process of interpersonal communication give us an insightful view into how language, only a single part of the communication of meaning, works along with the wide variety of shifting physical and societal variables of context which are incorporated into the background knowledge a reader/listener uses to understand communication and arguments.

However, what is a bit surprising about the similarities between the ideas of Grice and Toulmin is that they were working in different fields, linguistics and argument, respectively, looking at different problems, conversation and

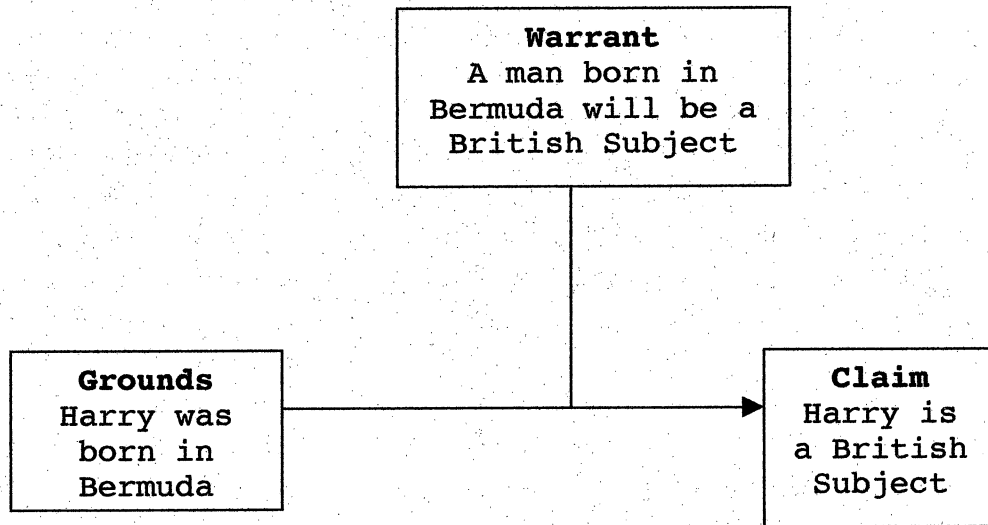
legal argument, but they came to quite similar conclusions. One seems to confirm and validate the other, so that they transcend being just myopic, field-specific theories. Grice's and Toulmin's ideas also, seem to link nicely to yet another field, psychology, where they receive some additional validation from, and add to the understanding of, the idea of mental models.



**Figure 1.** Toulmin's three basic elements of argument.

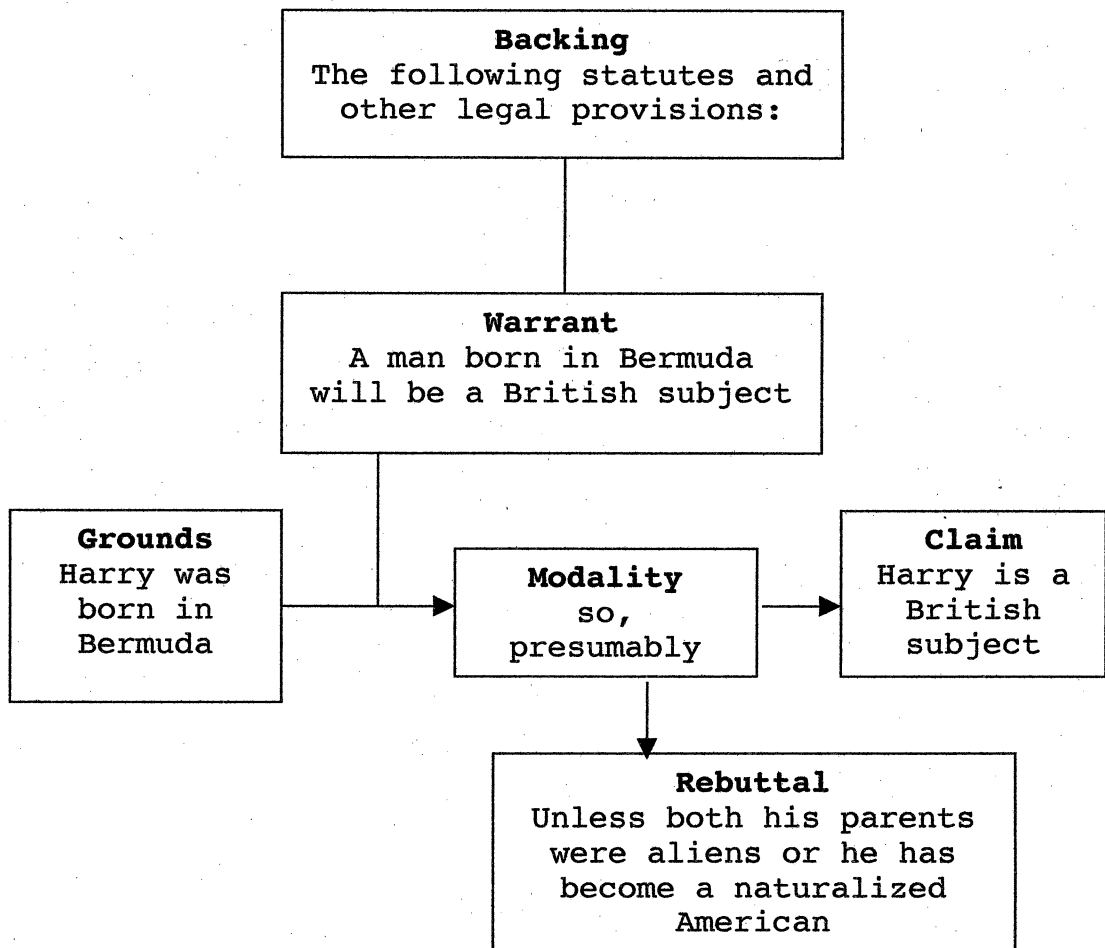


**Figure 2.** Toulmin's entire model of argument.



**Figure 3.** Three basic elements in Toulmin's "British subject" example.





**Figure 4.** Toulmin's entire "British subject" example.

### Chapter Three: Mental Models Underlying Grice's Implicature and Toulmin's Warrants

The world, to a large extent, is a vision of our own creation. We inhabit a mixed realm of sensation and interpretation, and the boundary between them is never openly revealed to us. And amid this tenuous situation, our cortex makes up little stories about the world, and softly hums them to us to keep us from getting scared at night.

Leif H. Finkle

The ideas of Paul Grice and Stephen Toulmin seem to point out that human beings use an incredible amount of background knowledge to communicate and make decisions. What is interesting about this is that, a great deal of the time, people are unconscious about the fact that they are employing background knowledge at all. The background knowledge that people acquire, and which may or may not be true, seems to be part of a person's mental model of the world. It seems that these mental models of the world are a key way human beings store background knowledge. After all, it is impossible for people to start each conversation or argument with an entirely clear mental slate because argument and conversation would slow to an impractical pace. What might have taken a few seconds to say would take all day if people had to explain the chain of facts and assumptions underneath what was said in each conversation or argument. Even the seemingly simplest of exchanges could take an entire day to explain and analyze; hence, background knowledge has to be

stored in case a situation in which that knowledge might be needed arises.

The idea of mental models seems to have multidisciplinary support. The fields of psychology and linguistics have long used the concept of mental models to explain how individuals are able to conceptualize the way processes or machines work and try to understand how the human brain understands and interprets language. Additionally, individuals manipulate mental models in order to predict the possible outcome of events, which makes these models important for reasoning and argument as well.

While the idea of mental models may, at first glance, seem more theoretical and scientific than Grice's and Toulmin's more practical theories, in reality mental models are not. In fact, mental models seem to employ background knowledge in a way similar to Grice's implicature or Toulmin's warrants and their backing. For an everyday example of how people employ background knowledge to make a simple model, I will use my own experience. I recently was putting a load of wet laundry in the clothes dryer when the cable that holds the dryer door closed snapped. Of course, the dryer will not run if the door is not closed tightly, so I looked at the position of the door and guessed that I would need something long and heavy to wedge up against the door to keep it closed. I wandered out into the family room to look for an object that might do this. Mentally, I wedged an

assortment of chairs against the door of the dryer, but by using my model I could see that they were all too short or light. Then I cast my eyes on the heavy Mexican barstools at the kitchen counter. I pictured one of them wedged up against the dryer door in my model and it was a perfect fit, so I lugged it to the dryer and it worked to keep the door shut so I could finish drying my clothes. The problem I was presented with was how to keep the door closed, but the background knowledge I had to employ involved knowing the approximately weight of the objects without lifting them, knowing the angle I would need between the door and the floor to make a wedge that could hold the door closed despite the wet clothes being thrown up against the door, and so on. I am not an engineer, but based on my experiences in everyday life situations, I could take information stored in my mind and mentally make a picture or model and manipulate it until I found a solution to my problem. Obviously, mental models like this are quite useful because they save people the hard labor of trial and error. In this instance, I only had to carry one chair to the dryer rather than carrying several, and I was able to use my model to decide how to prop the door shut.

The idea of mental models is definitely not new to linguists who are looking at how background knowledge works.

In Discourse Analysis, Gillian Brown and George Yule say that,

There have been several attempts to provide conventional or stereotypic representations of "knowledge of the world" as a basis for the interpretation of discourse. These representations, found in psychological and computational approaches to discourse understanding, are mainly used to account for the type of the predictable information a writer / speaker can assume his hearer / listener has available whenever a particular situation is described. (236)

Brown and Yule divide these "representations" of knowledge into several different theories, such as "frames," "scripts," "scenarios," "schemata," and "mental models." However, each involves some sort of mental model or contextual association, and the differentiation between the groups is not of great concern here because the ideas tend to overlap and be variations on the theme of mental models.

Philip N. Johnson-Laird, author of Mental Models, takes a more psychological approach to mental models. What he says about inference, in relation to mental models, echoes what both Grice and Toulmin say about the role of inference and logic in relation to their own theories (see the introduction

of this thesis). Johnson-Laird points out that, "Valid inferences were made long before the invention of logic; [sic] and they can be made without relying, consciously or unconsciously, on rules of inference," and believes "inferences are based on mental models" (Johnson-Laird, Mental 126). Further, he says, "There is an important distinction between two sorts of inference that occur in daily life" (Mental 127). On the one hand, there are the explicit inferences, in which, "You must make a voluntary decision to try to make them. They may take time and they are at the forefront of your awareness." On the other hand, implicit inferences are "the inferences that underlie the more mundane processes of intuitive judgment and the comprehension of discourse tend to be rapid, effortless, and outside conscious awareness" (Johnson-Laird, Mental 127). Two examples of the use of these "mundane processes" would, of course, be filling in the unstated gaps in cases of implicature and in everyday arguments.

Mental models, like Grice's conversational implicature and Toulmin's model of argument, involve a leap in logic that may come either instantly and intuitively or may be worked out with painstaking logic. This, along with the other similarities, suggest that Grice's implicature and Toulmin's model of argument are only the surface manifestations of a much larger and more complex process of storing and using

mental models composed of background knowledge. This idea, that there is some larger network of background knowledge or a series of mental models, is one that is often hinted at. For instance, Brown and Yule suggest that,

We might just say that the knowledge that we possess as users of a language concerning social interaction via language is just part of our general socio-cultureal knowledge. This general knowledge about the world underpins our interpretation not only of discourse, but virtually every aspect of our experience. (233)

I believe that, when studied together and considered in the context of their relationship to mental models, Toulmin and Grice's ideas show that human beings have the capacity to build much more complex series of models than have been previously explored. Even Brown and Yule admit:

that, until we can develop experimental techniques which allow us to draw conclusions about how people process naturally occurring discourse in 'real-life' contexts, we shall continue to underdetermine human understanding and overindulge our simplistic analytical metaphors. This applies not only to the nature of inference, but to the more general concept of comprehension itself. (269)

Johnson-Laird makes an even more compelling case for how little human beings know about their own brains and how they work. It is as if we are the most ignorant about ourselves:

At the beginning of this book, I raised the perplexing argument that the mind must be more complicated than any theory of it: however complex the theory, a device that invented it must be still more complex. Obviously, cognitive scientists aim to understand the mind -- to have a mental model of a device that makes mental models. There is a striking similarity between this goal and the achievement of self-awareness: the mind is aware of the mind. It understands itself at least to some extent, and it understands that it understands itself...The idea is both central to the subjective experience of consciousness and paradoxical. It resembles the puzzle of the inclusive map: if a large map of England were to be traced out in accurate detail on the middle of Salisbury Plain, then it should contain a representation of itself...and so *ad infinitum*. (Johnson-Laird, Mental 438)

Using mental models is a clever way the human brain stores and manipulates background knowledge in order to use that knowledge to interpret, reason, or solve problems. Two



examples where the use of these mental models can be seen are Grice's Implicature and Toulmin's unstated warrants. It is in the form of these mental models that listeners/readers store the background knowledge they need to fill in the gaps of information when faced with implicature or everyday argument. The word "model" is deceptive in a way because these models are not like the static models that people might build of wood, plastic, clay or wood. They may not even be something that can be seen visually with the mind's eye, but they are rather connected bits of information. These models are fluid and shifting with the background knowledge flowing into them at an incomprehensible (and, possibly, unconscious) pace. New information is added and new focuses brought into view as fast as dendrites can fire. Within the model, additional models and analogies can be built and examined. This is similar to watching Pop Up Videos on VH1, because objects within the music videos have dialog balloons which "pop up" on the screen and impart additional information, a subtext, about the video. Mental models might additionally be compared to opening a document on a computer's hard drive, then opening several other documents to search for passage to copy, pasting that passage into the first document, and running the spell check. These comparisons are somewhat simplistic compared to the multitasking the human brain is capable of, but they show how models can be built within

models and how information from a multitude of models can be opened at the same time. Brown and Yule say something similar about background knowledge:

It then became possible to think of knowledge-of-the-world, as organized into separate but interlinked sets of knowledge areas which, taken together, would add up to the generalized knowledge that humans, in comprehending discourse, appear to use. (237)

Mental models underlie both Grice's implicature and Toulmin's model of argument. If we look back at some of the earlier examples given in this thesis it is easy to see the connections. The example in which the speaker is implying that Mike is home because his car is parked in his driveway can easily fit into the idea of the mental model. Based on the background knowledge that the speaker and the hearer share about Mike and the location of his car, they can construct similar models of what is happening if Mike's car is parked in Mike's driveway. While using cars as indicators to see if someone is home is not entirely accurate, it is common because we use our cars for travel. Cars, therefore, are associated with our current location. If we go back to Toulmin's argument of "where there is smoke there is fire," a mental model could easily be employed there, as well (Fig. 5). While there is a scientific explanation of what fire is and why it necessarily produces smoke, most people associate

smoke and fire because of their life experiences rather than scientific fact. These past experiences have been filed away as background knowledge, and therefore, most people can quickly bring up the mental model that shows that smoke denotes fire. Smoke and fire are so closely associated with one another, that, most likely, smoke and fire will be "stored in the memory as a single, easily accessible unit" (Brown and Yule 236). Just the smell of smoke instantly brings a realization that there might be a fire.

It is significant that mental models can be placed as the force underlying both Grice's implicature and Toulmin's warrants, because it shows how prevalent and critical mental models are for human beings to interpret the world and to communicate with one another. In fact, it is from these underlying models, I would argue, that people extract their interpretations of meaning and their sense of reality, what is real or unreal, and what is likely or unlikely. Human beings, in essence, construct their own realities, which vary from person to person, but also, in most cases, conform to the normal variations one might expect in a society. I believe that from the time humans are born, they are constructing their individual models of the world, and each experience they have helps them shape their ideas of what the world is like. If a person lives in an impoverished and gang-ridden neighborhood, that person's model of the world is going to be different from the model of someone who lives in

a comfortable, middle-class neighborhood. What is considered normal, everyday life would be different for these two people because they are exposed to differing environments. For instance, the person who lives in the lower income neighborhood might see that "everybody" goes out and tries to get a job after high school, while the person from the middle-class neighborhood might think "everybody" goes to college. Generally, it would seem that the person in the better neighborhood probably would have a more positive view of the world. People take what they see around them and use that to form their mental models of the world.

What makes mental models particularly useful for reasoning and comprehension is that the background knowledge called up for a current situation does not have to come from a situation identical to the one a person is currently facing. Information gained in a similar experience can be applied to a new situation, for example the experiences a person had when starting at a new school could be used when that person starts a new job. As far as deciphering discourse, Brown and Yule say that, "the interpretation of discourse is based to a large extent on a simple principle of analogy with what we have experienced in the past" (233).

The bits of background knowledge that are used to compose mental models appear to be stored in relevant groups. (This is not to say the information is only accessible if a person opens the right model since information can be

relevant in more than one situation or analogical experience.) Brown and Yule say,

It is a feature of these knowledge representations that they are organized in a fixed way as a complete unit of stereotypic knowledge in memory. Thus knowledge of a restaurant scene is treated as being stored in memory as a single, easily accessible unit, rather than as a scattered collection of individual facts which have to be assembled from different parts of memory each time a restaurant scene is mentioned. (236)

Mental models work as a fast way to bring up bits of possibly relevant information from which people can then quickly pick the information they need and discard the irrelevant information. It is somewhat similar to carrying a whole tool box to a home improvement project, because then all the necessary tools are there where the work is to be done. If people bring one tool at a time to the location of the project, then much time and energy can be wasted going back and forth to the garage. Blocks of information are faster to deal with than a trickle of facts, some of which are relevant and some of which are not.

However, I believe mental models, as wonderful and undeniably useful as they seem to be, may be a major factor in miscommunication and unsound decision making, because ultimately humans' mental models of the world are substituted

for the real world. As Grice's implicature is used like a shorthand of communication through language, so the models are the "shorthand" for reality. This is where problems can begin because either the analogy or model may not correspond well enough with the current situation that a person is facing, or the model may not accurately reflect the real world. Analogies tend to be inherently risky and need to be thought out carefully because what works in one situation may not work in another, but the more insidious problem is what a person views as real or possible, or as unreal or impossible, may not be.

Brown and Yule touch on one of the potential problems of mental models when they discuss a type of model called the schemata, which they define as "organized background knowledge which leads us to expect or predict aspects in our interpretation of discourse" (248). As we all know from real life experiences, what we expect is not necessarily going to be fulfilled. Human beings' expectations can lead them to interpret an utterance or text differently from the intended meaning or to interpret a situation incorrectly. According to Brown and Yule,

In the strong view, schemata are considered to be deterministic, to predispose the experiencer to interpret his experience in a fixed way. We can think of racial prejudice, for example, as the manifestation of some fixed way of thinking about

newly encountered individuals who are assigned undesirable attributes and motives based motives on the basis of an existing schema for members of the race. (247)

Expectations flood our lives though we may not consciously think about them. If a person puts on a jacket, that person expects to be warmer. If a person takes a first bite of an ice cream sundae, that person expects the ice cream to taste sweet. If person turns on a TV set, that person expects the TV program to be in a specific language, like English. If a person goes to the mall the day before Christmas, that person expects the mall to be crowded and busy. If a person pays his or her electric bill, that person expects uninterrupted electricity. The expectations for the jacket and the ice cream may be scientifically explained, but the other expectations may or may not be fulfilled depending on a number of societal and contextual factors, and, of course, expectations may vary from place to place or person to person. Here in Southern California, if someone is invited to a barbecue, that person might correctly expect that beef hot dogs, beef hamburgers, or beef steaks will be served. However, if that barbecue was being held in Hindu India, where cows are considered sacred, it is highly unlikely beef will be served. However, there is no need to travel to another continent to see expectations clash (and communication suffers). Most married couples have had to

negotiate clashing expectations for celebrating anniversaries, spending vacations, decorating houses, etc. The problem with expectations is that what a person expects may not be fulfilled in some situations; therefore, the interpretation or the decision a person makes based on that expectation may be incorrect.

Brown and Yule look at an interesting case that illustrates the idea that differing expectations leading to different interpretations are not "caused by different cultural backgrounds alone" (Brown & Yule 248). The following passage is part of passage that was given to two different groups of students who "had very similar cultural backgrounds," but who were expected to have different interests (Brown & Yule 248):

Every Saturday night, four good friends get together. When Jerry, Mike, and Pat arrived, Karen was sitting in her living room writing some notes. She quickly gathered up her cards and stood up to meet her friends at the door. They followed her into the living room but as usual they couldn't agree on exactly what to play. Jerry eventually took a stand and set things up. Finally, they began to play. Karen's recorder filled the room with a soft and pleasant music. Early in the evening, Mike noticed Pat's hand and the many diamonds...(Anderson et al., 1977: 372)



The two groups who receive the passage were "a group of female students who were planning a career in music" and "a group of male students from a weight-lifting class." As might be expected, the former group favored interpreting the passage as being about a "musical evening," while the latter group "preferred an interpretation in which the passage described some people playing cards rather than musical instruments" (Brown & Yule 248). The two groups' differing interests and experiences led them to have different expectations and, therefore, differing interpretations.

Faulty "default elements" are another, similar way that expectations can lead people to interpret an utterance or text differently from the intended meaning or to make an incorrect assumption about a situation. Default elements are the bits of information that we take for granted as being a part of a text or situation. Brown and Yule say, "These default elements will be assumed to be present, even when not mentioned, unless the reader / hearer is specially told otherwise" (Brown & Yule 236). To illustrate, they use the following:

Given one particular situation, such as a restaurant scene, the writer / speaker should not have to *inform* his reader / hearer that there are tables and chairs in the restaurant, or that one orders and pays for the food consumed therein. In representations of this knowledge, conventional

aspects of a situation, such as tables and chairs in a restaurant, can be treated as **default** elements. (Brown & Yule 236)

When default elements do not correspond to reality, faulty conclusions are reached. Taking advantage of a person's default elements is a way that dishonest people have separated others from their money for years. For example, I once went to look at an old Mercury Cougar that I was considering buying, which was advertised as having air conditioning. I relied on my default element when I envisioned myself flipping on the air conditioning in the Cougar and feeling the cool air coming out. That is the way air conditioning works. I have used many cars with air conditioning and that is the way they all worked. However, when the hood of the car was raised, it was obvious that the air conditioning was not yet entirely installed. If I had relied upon the information provided by my default element and not investigated further, I would have concluded incorrectly that I was buying a car with working air conditioning. It does not take a dishonest person for default elements to potentially cause problems, though. Anytime we fill in a bit of unstated information using a default element that does not correspond with reality, we are assuming something that is not true and may be in danger of interpreting or concluding incorrectly. For example, based on default elements, a person may assume that the restaurant

he or she is going to will have forks and knives on the table. However, that would be an incorrect assumption if the restaurant served food medieval style and patrons were expected to eat with their fingers and get sauce under their fingernails, just like the medieval folks did.

However, despite the fact mental models do have some potential problems, human beings refer to their models when they make decision about their courses of action even if their action is something as simple as deciding where to put the knife they have just used to butter their toast. It is impossible to interpret and make logical decisions without background knowledge, and the models are the storage system for that background knowledge. What is believed to be real or possible or likely or unavoidable, not to mention what is right or wrong, is determined by the model of the world a person uses. The models impose some order on an often conflicting and confusing world and allow humans to escape an overwhelming muddle of conflicting information.

The idea that mental models are based on a person's experiences does bring up the interesting point that everyone's background knowledge is not the same. Even in a family living in the same house, not every individual is going to have the same background knowledge. Even Brown and Yule say, "These *models* of reality are, of course, representations of the way the world is. They may differ from one individual to the next. This is unavoidably the

case when such models are the result of a listener's (or reader's) comprehension of discourse" (Brown & Yule 252).

You may ask: why is it that individuals' ideas of reality do not hopelessly clash, leaving all of humankind unable to understand and communicate with one another? There seem to be several reasons. Grice's Cooperative Principle explains how people observe his four maxims in order to communicate in conversations with one another. If past experiences, beliefs, and values are held in common, then understanding of communication and argument is more likely than if past experiences, beliefs, and values are different because these things lead to similar models of the world and its workings.

It seems simple enough, but oftentimes it seems that miscommunication is not as simple as one person saying to another, "I do not understand you." Rather, it takes a more subtle form in which the first person makes a statement, the second person interprets it differently than the first intended, and neither person realizes that the message that was meant to be conveyed was not. This sort of miscommunication points to what seems to be a larger process at work that is reflected in the warrant and its backing in Toulmin's model of argument because there we can see how background knowledge is used in everyday logic. It is as if there are "maxims" of shared understanding: past experiences, beliefs, and values that work as guides so that people can

build similar mental models and, as a result, reason similarly (Fig. 6). Just as in conversational implicature, what the speaker or writer leaves unstated he or she assumes (oftentimes without realizing he or she is assuming anything) the listener or reader will be able to fill in to understand what was implied. However, if the listener/reader does not share the same experiences, beliefs, and values, he or she may not understand what was implied and/or may fill in the gap with different information than what the speaker/writer intended and have a possibly very different interpretation of what was implied. As Brown and Yule point out, "The individual hearer's mental model of discourse can differ from the speaker's, and there is no suggestion that *the text is, in any sense, the model*" (Brown & Yule 234).

Past experiences, whether they be individual, shared, or historical, are possibly the most important part of the formation of mental models because they are important to the formation of expectations, beliefs and values. Shared past experiences, as a result, are a key to members of a group or society building similar mental models and interpreting language and situations in a like manner. For example, people who lived through the Great Depression of the 1930's often were conscious of wasting anything and did not trust banks due to the number of bank failures in that time, which resulted in people losing all their savings. My own great-grandfather was known to keep his money buried in a jar on

his Arkansas farm. However, in 1999, a typical 21-year-old college student did not experience the Great Depression, so if someone who lived through the Depression said he or she does not trust banks, then the typical 21-year-old would try to understand using his or her own experiences. All reputable banks are now insured by the FDIC (Federal Division of Investment and Commerce), and it is unlikely that the student would have ever seen a bank close and the depositors lose their life savings, so he or she would try to understand why the Depression survivors distrust banks based on his or her own life experiences. He or she might draw upon experiences with exorbitant or hidden bank charges for using automated teller machines, talking to a teller, closing an account, allowing an account to dip below a minimum account balance, or having cancelled checks returned, and conclude that it is not a good idea to trust banks because they have these hidden or expensive charges, so it seems as if they are always trying to take money away from a person. The young student may agree that it is not a good idea to entirely trust banks, but he or she will not fully understand the idea that the Depression survivor was trying to get across. After all, the Depression survivor is very likely trying to express that he or she has seen banks close before and does not trust banks to keep his or her life savings safe. It is this "violation" of the "maxim" of shared experience that leads to an implicature or gap of understanding, which in this case

has not been correctly filled in because, based on their past experiences, the two participants have constructed different mental models. When a large segment of a population shares experiences, those people have similar mental models and are better able to fill in the gaps of understanding with what the speaker or writer from their group intended.

Beliefs are also instrumental to interpretation and decision making, as well as the formation of values. These beliefs may include organized religious beliefs and/or myths (even these designations depend on your perspective) or even cultural norms. Beliefs include world view, or how people see themselves in relation to the physical world, deities and other great powers (including money, science, and technology), people of the same group, and people of different groups. As well, there are also beliefs and myths about the origin, purpose, or destiny of a group of people or of human beings in general (sadly, these beliefs are often used to rationalize one group's mistreatment of another). If one is not part of a belief system, he or she is going to have difficulty filling in gaps in logic that seem quite obvious to people who are members of that belief system and have incorporated that belief system into their mental models.

A powerful part of the communication linked to beliefs is the standardization of symbols, which is a group coming to

agree on, and/or reinforcing, a meaning or set of meanings and associations with a symbol. In the mind of an American, the phrase, "As American as apple pie," creates all kinds of associations: love of mothers, home, patriotism, tradition, and so on. However, the phrase is apt to be very puzzling to a person living in another country who hears it for the first time. Also, since symbols are often presented visually, they may act as context for a statement that is spoken or printed, so background knowledge about the symbol must be "called up" and incorporated into mental models. Of course, shared experiences also help give symbols their meaning as well.

Finally, values influence how we interpret situations and what deductions we make about them. Based on past experiences and belief systems, people determine what is good, what is bad, what is better, what is worse, what is important, and what is less important or trivial. For example, here in the United States of America, we generally tend to hold the newest, latest, and most up-to-date products, ideas, and systems in highest esteem, while other cultures value more traditional things. For example, I have students from Mexico, Vietnam, and Nigeria who have complained to me that they are shocked at how the elderly are treated with little respect in the United States. To them, the elderly are instilled with the wisdom of age and experience and play an important role in maintaining culture and tradition. They value their elderly. On the other hand,



in the United States, the elderly are routinely considered outdated, archaic, not worthy of employment, and a burden to their children. It might also be taken into account that Americans' love of individuality may supersede feelings of responsibility and duty to family. Values are somewhat like the yardsticks or scales built into mental models which allow us to measure and weigh our options against each other.

As we can see, if we use Grice's model of implicature as an analogy, the past experiences, beliefs, and values that statements, in conversation and in argument, often leave unstated act as maxims, and an implicature is created by violating the three maxims of understanding. In other words, those people who do not share the same past experiences, beliefs, and values are very likely to interpret things differently from people with more similar backgrounds.

The building of like models in groups or societies boils down to a combination of shared experiences and social reinforcements. Of course, there will be variations from culture to culture, and subcultures and subsets of cultures will vary as well. However, those people who are deemed to be too far from the beliefs and models of the vast majority will find themselves castigated and discredited by the other members of their society. They are labeled as abnormal and their sanity is called into question.

These models color people's interpretation of meaning because humans' past experiences and beliefs affect how

people interpret what they see and hear. People refer back to their models of the world in order to understand any new information they are given. They check out what they have been told (consciously or unconsciously) by asking a series of questions of themselves, and the answers are drawn from their mental model. Is what I have been told possible? Is what I have been told likely? How does the presenter of this message influence my response to this message? Do I agree with the premises? Do I agree with the conclusion? How should I respond? What action do I need to take? Whatever model of the world a person has constructed will be used to answer these questions, and that is what accounts for different interpretations of texts or situations.

For example, if you were approached in the supermarket parking lot by a scruffy-looking, middle-aged, black man who told you his car died, and he then asked if you could spare \$20 towards his Greyhound Bus ticket, would you believe his story and give him \$20? If so, why would you? If not, why would you not? The answers to these questions are dependent on the mental model of the world you have constructed. In this situation, one person might return to the store, report the incident, and ask for an escort; another person might just walk past the man silently; a third person might give the man some cash; a fourth person might concoct and give some excuse for denying the man's request; and a fifth person might become angry at the man and say something cutting to

him. The responses all depend on interpretation, and given the same reality, people will make different choices because they look not to reality but to their models of reality to interpret the situation and decide on a course of action.

The Leap is of the Same Nature	
<i>Grice's Implicature</i>	<i>Toulmin's Warrants</i>
<p>Listener: Is Mike home?  Speaker: His car is parked in the driveway.</p>	<p>Speaker: When there is smoke, there is fire.</p>
<p>The listener assumes that the speaker is following the Cooperative Principle</p>	<p>The listener assumes that the speaker is following the Cooperative Principle.</p>
<p>However, it seems the Maxim of Relevance is flouted; this is the source of the gap.</p>	<p>However, since this is an argument, the listener may question if the Maxim of Quality is being flouted; this is the source of the gap.</p>
<p>The listener must use background knowledge of the world to find the connection:</p>	<p>The listener must use background knowledge of the world to fill in, and evaluate, the connection:</p>
<ul style="list-style-type: none"> <li>• <i>Cars are for travel</i></li> <li>• <i>If Mike's car is home, Mike is probably not traveling, but at home.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Fire burns</i></li> <li>• <i>When something burns, smoke is produced</i></li> <li>• <i>Smoke does, therefore, indicate fire</i></li> </ul>
<p>Once the connection is made, the listener understands what the speaker meant.</p>	<p>Once the connection is made, the listener understands what the speaker meant and can evaluate the logic of the argument.</p>

**Figure 5.** The leap is of the same nature.

**Possible Parallelism Between  
Grice's Implicature and Toulmin's Warrants**

<i>Grice's Implicature</i>	<i>Toulmin's Warrant</i>
<b>Cooperative Principle</b>	<b>Cooperative Principle</b>
<b>Four Maxims speakers/writers must obey to be understood when using implicature:</b>	<b>Three Maxims of understanding unstated warrants and backing:</b>
1. <i>Quantity</i>	1. <i>Past Experiences</i>
• Say enough	• Shared, individual, historical (importance to the formation of belief and values)
2. <i>Quality</i>	1. <i>Beliefs</i>
• Say what is truthful or reasonably substantiated	• World view
	• Origin, purpose, destiny
	• Standardization of symbols
3. <i>Relations</i>	2. <i>Values</i>
• Say something that relates to the conversation at hand	• What is good, bad, better, worse
	• What is important or trivial
4. <i>Manner</i>	
• Say what is to be said in a way that can be understood	
Any gaps in understanding are filled in with <b>Context and Background Knowledge</b>	
This knowledge is drawn from the <b>Mental Model</b> of the world a listener/reader has.	

**Figure 6.** How Toulmin's warrant is parallel to Grice's implicature.

## Chapter Four: Conclusions and Implications

Words like violence  
Break the silence  
Come crashing in  
Into my little world  
Painful to me  
Pierce right through me  
Can't you understand  
Oh my little girl

"Enjoy the Silence," Depeche Mode

As it is presently described, the theory of mental models actually predicts massively detailed mental representations of any event encountered, whether in life or via text.  
(Brown & Yule 255)

The idea of organizing the background knowledge necessary to fill in gaps in communication, logic, and meaning by using mental models leads to many questions involving varying fields and a few possible suggestions for communication. After examining implicature, warrants, and mental models, it is obvious that there is no perfect language or absolute meaning invested in language itself which will keep human beings from misunderstanding each other because meaning is not located in words. Meaning comes from the organized and interpreted background knowledge that people carry with them in their minds, so attempts to understand language and the mental processes are not in themselves enough to prevent misunderstandings or to create perfect understanding between individuals or groups. As Brown and Yule point out, even everyday instances of interpreting meaning can be quite complicated:

However, it is typically the case that the texts which the reader will normally encounter will show a minimal amount of formal cohesion, assume massive amounts of existing background knowledge, and normally require the reader to make whatever inferences he feels willing to work for in order to reach an understanding of what is being conveyed.

(Brown & Yule 270)

Also, since the reality we, as individuals, inhabit is not going to be identical to the reality that our neighbors inhabit, there are clashes in logic and arguments, misunderstandings, disputes, and sometimes even physical violence between individuals and groups.

This brings up the somewhat philosophical question of whose reality is better/best. Is the best reality the one which corresponds most closely to the world or one that is blissfully optimistic? Is it people with the most experience or knowledge who have the best grip on reality? Or could it be people who show a particular skill such as mechanics or writing who have a better grasp on reality? Does it vary from situation to situation? Johnson-Laird, author of Mental Models, suggests that the best reality is the one that corresponds most closely to the real world: "A contingent assertion is true if it corresponds to reality; false if it conflicts with reality" (Johnson-Laird 438). Obviously, it

could be quite dangerous if someone believed he or she could jump off a four-story building and land unharmed. However, it might be equally dangerous to be the person who know that the Earth revolves around the sun when the Church and the rest of the society "know" that the sun revolves around the Earth.

Along that line of thought, some might wonder if the ideas about mental models put forth in this thesis support Foucault's ideas of "episteme" or "discourse formulation" and "marginalization" (Foss, Foss, Trapp 209-239). To some extent they seem to, since it seems likely that the group in power in a society will be able to marginalize people whose realities clash with their own. Remember that people thought Christopher Columbus was "mad" when he wanted to sail around a world that people once believed was flat, and the Victorians "knew" tomatoes were poisonous. What we believe today could be perceived as ludicrous tomorrow. Our ideas of common sense, intelligence, and/or sanity may be greatly influenced by the democratization of knowledge and social reinforcement of mental models.

Also, what about some forms of mental illness which are not merely one person's ideas clashing with society's ideas? Perhaps people with more serious mental illnesses, whose best hope of treatment is currently medication, are affected in a physical way that does not allow them to build models. Consequently, this does not allow them to function



successfully in the real, physical world, because their models do not correspond closely enough to the physical world and/or social expectations.

Minor problems of illogical thinking, also known as "cognitive distortions" (which we all tend to fall into at some point or another and which can often times be resolved on their own or with brief counseling), may just be the result of minor misrepresentations in a person's mental model (Ubell 584). People make distorted judgements because "all too often our logic is muddled by our fears, expectations, and desires... [F]or example...[w]e experience rejection and conclude that we are failures" (Langan 584). To break a cycle of distorted thinking and promote "clear thinking... confront your belief with *reality*, that is with real evidence" (Ubell 587). Once people accept that reality is different from the models they had previously been using, they change their models to more closely correspond to reality. At times, this can be accomplished quite simply; for example, "[t]herapists often ask their clients to make lists of good or bad things about themselves. This exercise shows patients that reality is different from their negative ideas" (Ubell 588).

These modifications of mental models, with the assistance of a therapist, bring up the necessary question of unscrupulous people who would like to change others' mental models in order to gain something themselves. In other

words, what effect does propaganda have on mental models? It may not be true that a certain brand of jeans will make someone "cool," but in advertising, we see that idea modeled repeatedly, in the hopes that we will accept it as reality and incorporate it as background knowledge into our mental models. When a politician lies to us, he or she wants us to accept his or her words as reality. Our society teaches us to be aware of these types of propaganda and accept them as relatively harmless, perhaps in part because we do not want to admit the impact they can have on us. However, the dishonest way that mental models can be influenced and modified can even be more insidious and damaging because it amounts to nothing less than brainwashing: that is, an instance where a person is systematically worn down until he or she replaces the background knowledge which composes his or her mental models of reality with the background knowledge he or she is given. Anthony Pratkanis and Elliot Aronson, authors of Age of Propaganda say that "[t]he first step to starting a cult is to construct your own social reality by eliminating all sources of information other than that provided by the cult" (Pratkanis, Aronson 241), and then, as the second step, "in constructing...[this] social reality is to provide a cult's-eye view of the world. This picture of the world is then used by members to interpret all events and

happenings" (Pratkanis, Aronson 242). They also say that cults are not alone in the use of these tactics:

But there is another reason for understanding the persuasion tactics of cults. Cults use the same persuasion tactics often used by other propagandists; cults just use them in a more thorough and complete manner. It may be useful to reread this discussion and instead of thinking of cults, consider your everyday social groups such as family, church, country, or place of work. We bet you'll find a touch of cult-like behavior in much of our social lives. (Pratkanis, Aronson 248-249)

These are just some of the various questions brought up by this look at implicature, warrants, or mental models. Unfortunately, for some of these questions I have less-than-definite answers, and so I defer to philosophers, psychologists, and psychiatrists.

For this thesis, communication, and more specifically understanding miscommunication in the hopes of avoiding miscommunication, is the focus. I do not mean, by putting forth the idea that decision making is based on individual world models, to advocate the idea that we should revert into a state of indiscriminate relativism, where there is no right, wrong, better, or worse and reality is "up for grabs." I only hope that putting forth the idea of interpretations

and decision-making based on mental models will better help in the understanding of communication.

At the very least, the idea of mental models should reinforce the ideas that we teach our English composition students: that they should not assume their audiences share the same knowledge or experience they do; that they should not simply throw out facts and conclusions and assume that the audience will be able to replicate and agree with their logic; that additional explanation and details increase a reader's ability to understand the meaning that a writer is trying to communicate; and that well-explained examples and illustrations can make somewhat abstract ideas they are trying to explain more concrete and their intended meanings more clear. However, this lesson is not just for composition students or their instructors. These basic tenets of clear communication hold true for all writers and speakers if they wish to communicate clearly and effectively.

In addition, the idea of mental models helps explain why communication goes awry between both individuals and groups. The problem is not in the words themselves, but in how the words are interpreted in the context of mental models. A large group such as a society encourages and enforces certain mental models for the individuals contained in that group. Not surprisingly, individuals from different societies will have clashing models of the world. What seems to be obviously the correct course of action to a person of one

group may seem to be sheer lunacy to a person from the other group. Also, take into account that stereotypical representations of people of various groups are going to inhabit these mental models. These stereotypes are not limited to major issues such as socio-economics, race, nationality, or religion. They could involve people who wear plaid. However, major issues tend to cause rather large political and military clashes, whereas wearing plaid, generally, will not.

Stereotypes, division, and classification analogies are all vital ways people use to make sense of new situations quickly, and, I would suggest, this also allows them to find the corresponding information in their mental models that guide their response. Of course, stereotyping itself can lead to communication problems, particularly when the stereotype contributes to feelings of mistrust between people or groups that destroy or undermine the credibility of the communicator. As Brown and Yule point out, "A large part of our comprehension of what we read and hear (and see, no doubt) is, after all, a product of our making sense of the motivations, goals, plans and reasons of participants in described or witnessed events" (Brown & Yule 268).

Therefore, if one group or individual uses a false stereotype of another group or individual, it is likely that the interpretation of what is said or done will be incorrect. For example, if an elderly gentleman believes that all long-

haired, teenage boys are trouble-makers, then, even if the long-hair teenage boy next door offer to help him carry something into his house, it is likely that rather than seeing this as a sincere gesture, the older man may think the teenager is just looking for an opportunity to steal from him. The same sort of distrust can arise between two countries (for example, the United States and the Soviet Union during the Cold War) or two groups vying for control of the same space (such as the Israelis and the Palestinians).

These two larger, intercultural problems point out the importance of not only communicating clearly, but also looking for where meaning may be lost or distorted or disputed because of differing perspectives. This may occur on a large scale between two countries or on a small scale between two individuals or two small groups within a culture.

Miscommunication due to clashing mental models can be the most frustrating form of miscommunication, because it is not the expression or the language of what is communicated that is the problem; rather, it is the ideology behind what is communicated that is the problem. In a way, it is similar to the difference between a person receiving directions over the phone and having difficulty finding a place on a road map versus a person receiving directions over the phone but having a different road map than the person giving the directions. These sorts of communication problems can only be overcome by the participants acknowledging that these

problems may come up, consciously working to find the underlying beliefs that clash, and working to come to some sort of mutual agreement about these clashes. In short, communication involves a dialogue in which participants learn more about the workings of each other's mental models. Without these mental models, communication is ineffective and can cause severe problems. If a clash is too great, communication dies; in its place arise name-calling, disparaging comments, exclusion, vandalism, physical violence, and/or war.

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